



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2014-0433; Directorate Identifier 94-ANE-39-AD]**

**RIN 2120-AA64**

**Airworthiness Directives; Rolls-Royce plc Turbofan Engines**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** We propose to supersede airworthiness directive (AD) 2014-24-08 that applies to all Rolls-Royce plc (RR) RB211-535E4-37, RB211-535E4-B-37, and RB211-535E4-C-37 turbofan engines with certain low-pressure (LP) fuel filter-to-high-pressure (HP) fuel pump tube assemblies, or HP fuel pump-to-fuel flow governor (FFG) or FFG-to-HP pump inlet overspill return tube assemblies and flanged adaptor installed. AD 2014-24-08 requires replacing certain LP fuel filter-to-HP fuel pump tube assemblies. Since we issued AD 2014-24-08, fuel leaks have occurred at the flanged joints of the HP fuel pump-to-FFG tube assembly and FFG-to-HP pump inlet overspill return tube assembly. This proposed AD would retain the original AD requirements and also require installation of new HP fuel pump-to-FFG and FFG-to-HP pump inlet overspill return tube assemblies and flanged adaptor. We are proposing this AD to correct the unsafe condition on these products.

**DATES:** We must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.
- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact Rolls-Royce plc, Corporate Communications, P.O. Box 31, Derby, England, DE24 8BJ; phone: 011-44-1332-242424; fax: 011-44-1332-249936; email: [http://www.rolls-royce.com/contact/civil\\_team.jsp](http://www.rolls-royce.com/contact/civil_team.jsp); Internet: [https:// customers.rolls-royce.com/public/rollsroycecare](https://customers.rolls-royce.com/public/rollsroycecare). You may view this service information at the FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125. It is also available on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2014-0433.

### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2014-0433; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal

holidays. The AD docket contains this proposed AD, the mandatory continuing airworthiness information, regulatory evaluation, any comments received, and other information. The address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Robert Green, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7754; fax: 781-238-7199; email: robert.green@faa.gov.

**SUPPLEMENTARY INFORMATION:**

**Comments Invited**

We invite you to send any written relevant data, views, or arguments about this NPRM. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2014-0433; Directorate Identifier 94-ANE-39-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this NPRM. We will consider all comments received by the closing date and may amend this NPRM because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this NPRM.

## **Discussion**

On November 20, 2014, we issued AD 2014-24-08, Amendment 39-18041 (79 FR 71308, December 2, 2014), “AD 2014-24-08,” for all RB211-535E4-37, RB211-535E4-B-37, and RB211-535E4-C-37 turbofan engines. AD 2014-24-08 expands the applicability to include the RB211-535E4-C-37 turbofan engine and requires removal from service of additional part number (P/N) LP fuel filter-to-HP fuel pump tube assemblies. AD 2014-24-08 resulted from reports of fuel leaks that resulted in engine in-flight shutdowns. We issued AD 2014-24-08 to prevent loss of fuel supply to the engine, which could lead to the in-flight shutdown of one or more engines, loss of thrust control, and damage to the airplane.

## **Actions Since AD 2014-24-08 Was Issued**

Since we issued AD 2014-24-08, fuel leaks have occurred at the flanged joints of the HP fuel pump-to-FFG and FFG-to-HP pump inlet overspill return tube assemblies. Also since we issued AD 2014-24-08, the European Aviation Safety Agency (EASA) has issued AD 2017-0006, dated January 10, 2017.

## **Related Service Information under 1 CFR Part 51**

Rolls-Royce plc has issued Service Bulletin (SB) RB.211-73-G230, Revision 3, dated April 8, 2016. The SB describes a modification (mod 73-G230) and introduces new HP fuel pump-to-FFG and FFG-to-HP pump inlet overspill return tube assemblies with a larger O-ring groove on the end adaptor sealing face. RR has also issued Service Bulletin SB RB.211-73-H131, Revision 1, dated September 2, 2014. The SB introduces a new LP fuel filter-to-HP fuel pump tube assembly. This service information is reasonably

available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

### **FAA's Determination**

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

### **Proposed AD Requirements**

This proposed AD would retain the original AD requirements and also require installing new HP fuel pump-to-FFG or FFG-to-HP pump inlet overspill return tube assemblies and flanged adaptor. This proposed AD changes the compliance requirement for replacing the LP fuel filter-to-HP fuel pump tube assembly adding a not to exceed flight hour/flight cycle life limit, consistent with the EASA AD requirements. This proposed AD would also prohibit re-installation of earlier HP fuel pump-to-FFG and FFG-to-HP pump inlet overspill return tube assemblies, as well as LP fuel filter to HP pump tube assemblies, P/N AE709623-1.

### **Costs of Compliance**

We estimate that this proposed AD affects 100 engines installed on airplanes of U.S. registry.

We estimate the following costs to comply with this proposed AD:

**Estimated costs**

<b>Action</b>	<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>	<b>Cost on U.S. operators</b>
Replacement of fuel tube assemblies	8.5 work-hours X \$85 per hour = \$722.50	\$17,800.00	\$18,522.50	\$1,852,250.00

**Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA’s authority to issue rules on aviation safety. Subtitle I, Section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency’s authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, “General requirements.” Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

**Regulatory Findings**

We have determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that the proposed regulation:

(1) Is not a “significant regulatory action” under Executive Order 12866,

(2) Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),

(3) Will not affect intrastate aviation in Alaska to the extent that it justifies making a regulatory distinction, and

(4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

#### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

#### **The Proposed Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

#### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by removing airworthiness directive (AD) 2014-24-08, Amendment 39-18041 (79 FR 71308, December 2, 2014), and adding the following new AD:

Rolls-Royce plc: Docket No. FAA-2014-0433; Directorate Identifier 94-ANE-39-AD.

#### **(a) Comments Due Date**

We must receive comments by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

#### **(b) Affected ADs**

This AD supersedes AD 2014-24-08, Amendment 39-18041 (79 FR 71308, December 2, 2014).

**(c) Applicability**

This AD applies to all Rolls-Royce plc (RR) RB211-535E4-37, RB211-535E4-B-37, and RB211-535E4-C-37 turbofan engines with low-pressure (LP) fuel filter-to-high-pressure (HP) fuel pump tube assembly, part numbers (P/Ns) UL16692, AE709623-1, 163521538, or 163521545 installed; or HP fuel pump-to-fuel flow governor (FFG) P/N UL16691 or P/N UL37214; or FFG-to-HP pump inlet overspill return tube assemblies P/N UL16690 or P/N UL37213; or flanged adaptor, P/N UL37218 installed.

**(d) Subject**

Joint Aircraft System Component (JASC) Code 7321, Fuel Control/Turbine Engines.

**(e) Unsafe Condition**

This AD was prompted by reports of fuel leaks that have resulted in engine in-flight shutdowns. We are issuing this AD to prevent loss of fuel supply to the engine, which could lead to the in-flight shutdown of one or more engines, loss of thrust control, and damage to the airplane.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Required Actions**

(1) After the effective date of this AD, replace LP fuel filter-to-HP fuel pump tube assembly, before the part exceeds 4,750 engine flight cycles (FC) or 15,000 flight hours (FH), since new, or during the next shop visit, whichever occurs first, using the Accomplishment Instructions of RR Service Bulletin (SB) RB.211-73-H131, Revision 1, dated September 2, 2014.



(2) After the effective date of this AD, for affected engines with an HP fuel pump-to-FFG tube assembly or FFG-to-HP pump inlet overspill return tube assembly, or flanged adaptor, installed, replace the parts concurrent with the actions specified in paragraph (g)(1) of this AD, if applicable, or during the next shop visit, using the Accomplishment Instructions of RR SB RB.211-73-G230, Revision 3, dated April 8, 2016.

**(h) Installation Prohibition**

After the effective date of this AD, do not install on any engine an LP fuel filter-to-HP fuel pump tube assembly, P/N UL16692, AE709623-1, 163521538, or 163521545; HP fuel pump-to-FFG tube assembly, P/N UL16691 or P/N UL37214, or FFG-to-HP pump inlet overspill return tube assembly, P/N UL16690 or UL37213; or flanged adaptor, P/N UL37218.

**(i) Definition**

For the purpose of this AD, a shop visit is the induction of an engine into the shop for maintenance or overhaul. The separation of engine flanges solely for the purpose of transporting the engine without subsequent engine maintenance does not constitute an engine shop visit.

**(j) Alternative Methods of Compliance (AMOCs)**

The Manager, Engine Certification Office, may approve AMOCs for this AD. Use the procedures found in 14 CFR 39.19 to make your request. You may email your request to: ANE-AD-AMOC@faa.gov.

**(k) Related Information**

(1) For more information about this AD, contact Robert Green, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7754; fax: 781-238-7199; email: robert.green@faa.gov.

(2) Refer to MCAI European Aviation Safety Agency (EASA) AD 2017-0006, dated January 10, 2017, and EASA AD 2014-0123, dated May 15, 2014, for more information. You may examine the MCAI in the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating it in Docket No. FAA-2014-0433.

(3) RR SB RB.211-73-H131, Revision 1, dated September 2, 2014 and RR SB RB.211-73-G230, Revision 3, dated April 8, 2016, can be obtained from RR, using the contact information in paragraph (k)(4) of this AD.

(4) For service information identified in this AD, contact Rolls-Royce plc, Corporate Communications, P.O. Box 31, Derby, England, DE24 8BJ; phone: 011-44-1332-242424; fax: 011-44-1332-249936; email: [http://www.rolls-royce.com/contact/civil\\_team.jsp](http://www.rolls-royce.com/contact/civil_team.jsp); Internet: [https:// customers.rolls-royce.com/public/rollsroycecare](https://customers.rolls-royce.com/public/rollsroycecare).

(5) You may view this service information at the FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

Issued in Burlington, Massachusetts, on May 5, 2017.

Robert J. Ganley,  
Acting Manager, Engine & Propeller Directorate,  
Aircraft Certification Service.

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